

February 2019 d3lab News

U01 Kickoff Meeting

An all-day Kick off Meeting was held at ISR for the U01 proposal, “Novel use of mHealth data to identify states of vulnerability and receptivity to JITAIs.” Inbal “Billie” Nahum-Shani, from d3lab and Dave Wetter, from The University of Utah, are Co-PIs on the project. Faculty from Harvard, Ohio State, Georgia Tech, University of Utah and UofM School of Public Health were all in attendance. The project proposes to advance the field of theory-driven behavior change interventions and cancer prevention by investigating the dynamic role of distinct emotions, SRC (Self-Regulatory Control) and context in predicting vulnerability to lapse and receptivity to self-regulatory activities in smokers attempting to quit. The study will also ascertain the utility of these states in triggering real-time self-regulatory recommendations.

Adaptive Interventions and Sequentially-randomized Trials in Education



Daniel Almirall presented at the annual Institute of Education Sciences Principal Investigator’s Meeting. He was a discussant in a symposium that focused on the development of adaptive interventions in the areas of ADHD, autism and literacy. His discussion was titled “Developing and Evaluating Adaptive Interventions in Education”. Currently, there is much research interest in the development of high-quality adaptive interventions in education, which are designed to guide the provision of sequential, individualized interventions at critical decision points. Related, on March 11-14, d3lab is hosting an intensive, four-day IES-sponsored workshop at ISR to train education researchers in how to apply adaptive interventions to their research.

Nick Seewald Defended his PhD Proposal



Nick Seewald, d3lab student working with Daniel Almirall, proposed his PhD thesis in Statistics in December. The proposal was titled "Analytic and Sample Size Considerations for Sequential, Multiple-Assignment Randomized Trials with Longitudinal Outcomes". The goal of the thesis is to develop methods which can assist scientists with designing sequential, multiple-assignment randomized trials (SMARTs) in which the primary aim is to compare two embedded adaptive interventions using a continuous outcome that is collected repeatedly over the course of the trial. Researchers interested in studying adaptive interventions via a SMART can use Nick's method to compute sample size requirements. The dissertation will also discuss trade-offs between sample size and the number of measurement occasions in the trial in order to maximize power, as well as modeling intensive longitudinal outcomes, which may be of use for assessing the effects of a mobile health intervention.

Adaptive Interventions for Improving Outcomes in Children with Autism in the Military

Daniel Almirall (together with co-investigators at the University of Rochester) designed a Department of Defense-funded study that will compare early intensive behavioral intervention (EIBI) to an adaptive, modular applied behavior analysis intervention (AM-ABA). The non-

inferiority randomized trial will involve 120 children with Autism Spectrum Disorder in military families.